



GROUP
ENG

MODEL
2017-19MY
Niro (DE P/HEV)

NUMBER
212

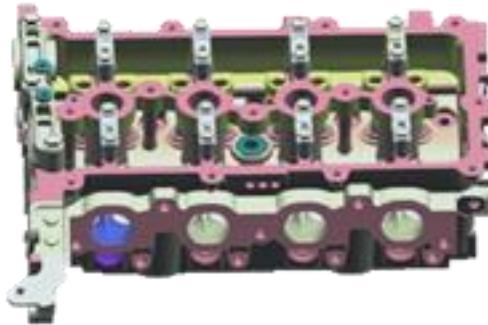
DATE
June 2020

TECHNICAL SERVICE BULLETIN

SUBJECT: **CYLINDER HEAD REPLACEMENT FOR LEAN MISFIRE**

This bulletin provides the procedure to replace the engine cylinder head on some 2017-2019MY Niro (DE HEV/PHEV) vehicles produced from January 1, 2016 through November 13, 2018. These vehicles may exhibit a MIL with misfire DTC's and/or experience a slight engine hesitation at the speeds between 24 - 37 MPH due to Exhaust Gas Recirculation (EGR) operation. The described condition does not cause the engine to stall. Follow the inspection instructions to check the production date range of the vehicle and the cylinder head before replacing the cylinder head as outlined in this bulletin.

**DTC Codes: P0300 (Random / Multiple Cylinder Misfire Detected),
P0301 (Cylinder 1 - Misfire Detected), P0302 (Cylinder 2 - Misfire Detected)
P0303 (Cylinder 3 - Misfire Detected), P0304 (Cylinder 4 - Misfire Detected)**



Note: The Cylinder Head part number provided comes assembled with Valves, Springs and Cylinder Head Bolts.

Printed TSB copy is for reference only; information may be updated at any time.
Always refer to KGIS for the latest information.

Circulate To: General Manager Service Manager Parts Manager
 Service Advisors Technicians Body Shop Manager Fleet Repair

SUBJECT:

CYLINDER HEAD REPLACEMENT FOR LEAN MISFIRE

Inspection Procedure:

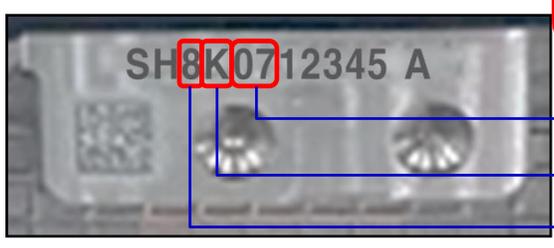
CASE 1: If DTC(s) **ARE present** and vehicle experiences engine hesitation between 24 – 37 mph, proceed to replace the cylinder head if the production date of the vehicle and the cylinder head matches the inspection dates outlined on page 2.

CASE 2: If DTC(s) **ARE NOT present** and vehicle experiences engine hesitation, then disconnect the EGR valve. If the hesitation goes away, proceed to replace the cylinder head if the production date of the vehicle and the cylinder head matches the inspection dates outlined on page 2.

- Verify the vehicle and cylinder head production dates below:

Cylinder Head Date Codes→	January 1, 2016 to November 7, 2018
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Locate the cylinder head **Lot Number** shown below and verify the cylinder head was produced within the production date listed in the table above.

Year			17 Y	18 Y	19 Y
			7	8	9

Month	A	B	C	D	E	F
	1	2	3	4	5	6
	G	H	I	J	K	L
	7	8	9	10	11	12

Day	1 Day	2 Day	3 Day	4 Day	5 Day	6 Day	7 Day	...	31 Day
	01	02	03	04	05	06	07	...	31

(Ex. Lot No.)
SH8K07XXXXX
 ↓
(November 07, 2018)

*** NOTICE**

This repair **ONLY** applies if the existing cylinder head was produced on or before November 7, 2018.



SUBJECT:

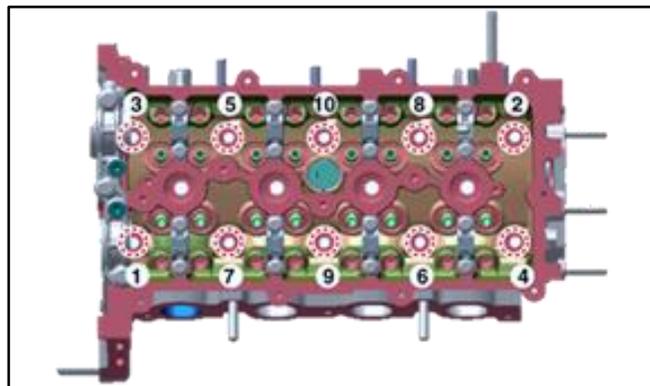
CYLINDER HEAD REPLACEMENT FOR LEAN MISFIRE

Replacement Procedure:

1. Replace the cylinder head by referring to the “Engine Mechanical System → Cylinder Head Assembly → Cylinder Head → Repair procedures” in the applicable Shop Manual chapter on KGIS.

**CAUTION**

Damage to cylinder head may occur if head bolts are not removed in the recommended order.

**IMPORTANT**

Read and carefully follow the cylinder head disassembly instructions provided on KGIS.

Related procedures for removing the cylinder head:

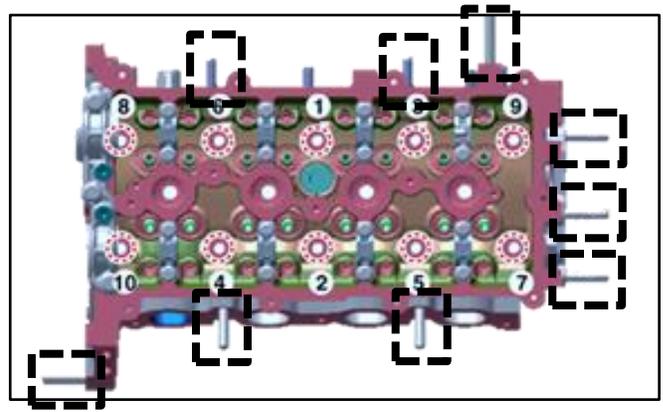
- A. Shut off the High Voltage circuit.**
Refer to the “Hybrid Control System → High-Voltage Shut off Procedures” chapters in the applicable Shop Manual on KGIS.
- B. Remove the air cleaner assembly.**
Refer to the “Engine Mechanical System → Intake and Exhaust System → Air Cleaner → Repair procedures” chapters in the applicable Shop Manual on KGIS.
- C. Remove the engine room under cover.**
Refer to the “Engine Mechanical System → Engine and Transaxle Assembly → Engine Room Under Cover → Repair procedures” chapters in the applicable Shop Manual on KGIS.
- D. Drain the engine coolant into a suitable clean container for reuse.**
Refer to the “Engine Mechanical System → Cooling System → Coolant → Repair procedures” chapters in the applicable Shop Manual on KGIS.
- E. Drain the inverter coolant.**
Refer to the “Hybrid Motor System → Hybrid Motor Cooling System → Coolant (Inverter) → Repair procedures” chapters in the applicable Shop Manual on KGIS.

For further details, please refer to the Shop Manual on KGIS.

- Remove the existing studs from the removed cylinder head and install them on to the new cylinder head.

★ NOTICE

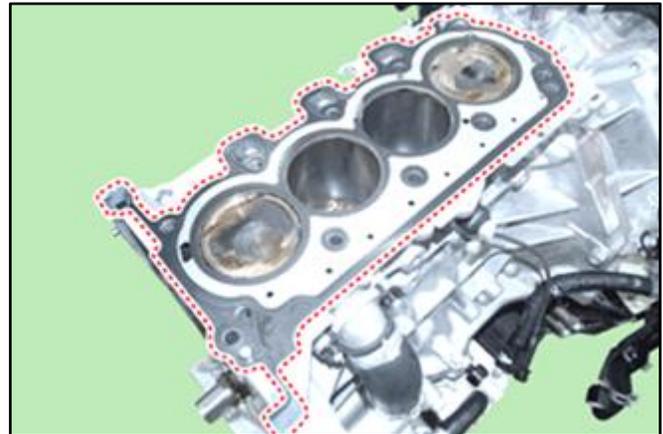
Head gaskets and gasket seals should never be reused. Replace with new gaskets/seals.



- Install the new cylinder head and related parts in the reverse order of removal.

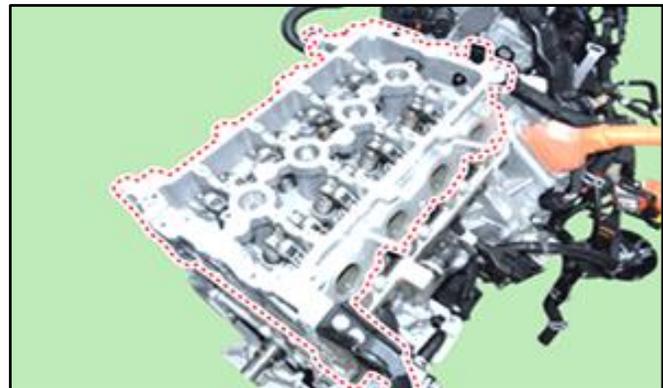
ⓘ IMPORTANT

Read and carefully follow the cylinder head installation instructions provided on KGIS.



★ NOTICE

Ensure to use the new supplied cylinder head mounting bolts.



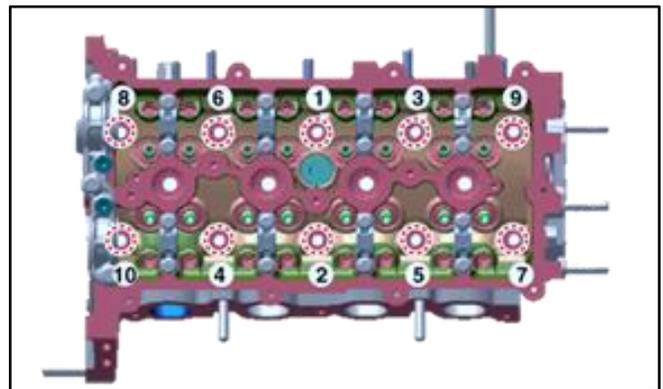
⚠ CAUTION

Damage to cylinder head may occur if head bolts are not torqued in the recommended order shown.

Torque Specifications for cylinder head bolts:
 9.4 - 12.3 lb.ft (12.7 - 16.7 N.m,
 1.3 - 17 kgf.m) + 120 - 125° + 120 - 125°

ⓘ IMPORTANT

Follow the outline on page 5 to replace the high-pressure fuel pipe assembly.



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CYLINDER HEAD REPLACEMENT FOR LEAN MISFIRE

4. Replace the high-pressure fuel pipe assembly with a new part.

**CAUTION**

Discard the removed high-pressure fuel pipe assembly, **DO NOT** reuse.

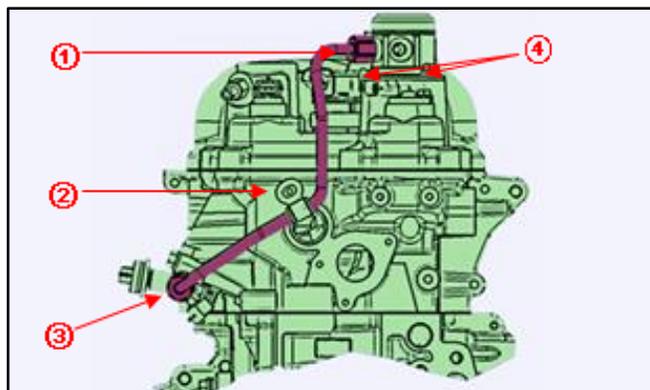
- When installing the new high pressure fuel pipe assembly, tentatively tighten the flange nuts ① and ③ by hand and ensure that the fuel pipe does not bend or twist. DO NOT tighten.
- Tighten the fuel pipe securing bracket ② as well as the vacuum pump bracket to the torque specifications.
- Tighten the high-pressure fuel pipe flange nuts ① and ③ to the torque specifications.
- Tighten the bolt flange ④ to the torque specifications.

**IMPORTANT**

Use the **SST 09314-3Q100** when tightening the flange nuts to the torque specifications. **DO NOT** use a general purpose tool.

**CAUTION**

Confirm that no fuel is leaking from the high pressure fuel pipe assembly connections after the engine is running.



Item No.	Torque Specifications
1	19.5 - 23.9 lb-ft (26.5 - 32.4 Nm, 2.7 - 3.3 kgf.m)
2	5.8 - 8.7 lb-ft (7.8 - 11.8 N.m, 0.8 - 1.2 kgf.m)
3	19.5 - 23.9 lb-ft (26.5 - 32.4 Nm, 2.7 - 3.3 kgf.m)
4	9.4 - 10.8 lb-ft (12.7 - 14.7 N.m, 1.3 - 15 kgf.m)

5. Using KDS, clear DTC(s) and verify vehicle operates normally.

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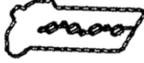
AFFECTED VEHICLE RANGE:

Model	Production Date Range
Niro (DE P/HEV)	January 1, 2016 to November 13, 2018

REQUIRED TOOL:

Tool Name	Figure	Comments
Torque Wrench		Locally Sourced
Torque Wrench Socket		P/N SST 09314 3Q100

REQUIRED PART:

Part Name	Part Number	Figure	Part Description	Qty.
Cylinder Head Kit	ENG21200000FF		Cylinder Head Complete 416T4 03SFFF	1
			Cylinder Head Gasket 22311 03HA0FFF	
			Cylinder Head Cover Gasket 22441 03HA0FFF	
			Exhaust Manifold Gasket 28521 03610FFF	
			Intake Manifold Gasket 28411 04500FFF	
			Fuel Tube Assembly 35305 03HA0FFF	
			ETC Gasket 28411 04510FFF	
			EGR Gasket 28493 03HA0FFF	

*Oil Plug Gasket and Oil Filter, refer to EPC.

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WARRANTY INFORMATION:

N Code: E51 C Code: ZZ5

Note: Claim Type	Causal P/N	Qty.	Repair Description	Labor Op Code	Op Time	Replacement P/N	Qty.
W	416T4 03S00	0	Cylinder Head Replacement and Clearing DTC(s)	22111F01	7.7 M/H	416T4 03SFFF	1
						22311 03HA0FFF	
						22441 03HA0FFF	
						28521 03610FFF	
						28411 04500FFF	
						35305 03HA0FFF	
						28411 04510FFF	
						28493 03HA0FFF	

Note: Use recommended Engine Oil in accordance owner's manual service specifications.
Refer to WCPM section 2.15 Genuine Kia Fluids & NPN Part numbers.

* Coolant/Antifreeze use UM040 CH012

* Liquid Sealant TB1217H use NPSEALANT

* Loctite 5900H use NPNOTHER

When substitute transportation is necessary, follow service policy and warranty claims processing manual guidelines.

